



6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R04-OAR-2016-0334; FRL– 9982-00-Region 4]

**Air Plan Approval; AL, FL, GA, KY, MS, NC, SC, TN;
Interstate Transport for the 2012 PM_{2.5} NAAQS**

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve portions of State Implementation Plan (SIP) submissions from Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee addressing the Clean Air Act (CAA or Act) interstate transport infrastructure SIP requirements for the 2012 Fine Particulate Matter (PM_{2.5}) National Ambient Air Quality Standards (NAAQS). The CAA requires that each state adopt and submit a SIP for the implementation, maintenance, and enforcement of each NAAQS promulgated by EPA, commonly referred to as an “infrastructure SIP.” EPA is proposing to approve the interstate transport portions of these infrastructure SIPs for the aforementioned states as demonstrating that air emissions in the states do not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

DATES: Comments must be received on or before [insert date 21 days after date of publication in the Federal Register].

ADDRESSES: Submit your comments, identified by Docket ID No EPA-R04-OAR-2016-0334 at <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. EPA may publish any

comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

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SUPPLEMENTARY INFORMATION:

I. Background

On December 14, 2012, EPA revised the primary annual PM_{2.5} NAAQS to 12.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). *See* 78 FR 3086 (January 15, 2013). An area meets the standard if the three-year average of its annual average PM_{2.5} concentration (at each monitoring site in the area) is less than or equal to 12.0 $\mu\text{g}/\text{m}^3$. States were required to submit infrastructure SIP submissions for the 2012 PM_{2.5} NAAQS to EPA no later than December 14, 2015.

CAA section 110(a)(1) requires states to submit SIP revisions within three years after promulgation of a new or revised NAAQS in order to provide for the implementation, maintenance, and enforcement of the new or revised NAAQS. CAA section 110(a)(2) outlines the applicable requirements of such SIP submissions, which EPA has historically referred to as “infrastructure SIP” submissions. Section 110(a)(2) requires states to address basic SIP elements such as monitoring, basic program requirements (e.g., permitting), and legal authority that are designed to assure attainment and maintenance of the newly established or revised NAAQS. Thus, section 110(a)(1) provides the procedural and timing requirements for infrastructure SIPs, and section 110(a)(2) lists specific elements that states must meet for the infrastructure SIP requirements related to a newly established or revised NAAQS. The contents of an infrastructure SIP submission may vary depending upon the data and analytical tools available to the state, as well as the provisions already contained in the state’s implementation plan at the time in which the state develops and submits the submission for a new or revised NAAQS.

Section 110(a)(2)(D) has two subsections: 110(a)(2)(D)(i) and 110(a)(2)(D)(ii). Section 110(a)(2)(D)(i) includes four distinct components, commonly referred to as “prongs,” that must be addressed in infrastructure SIP submissions. The first two prongs, which are codified in section 110(a)(2)(D)(i)(I), require plans to prohibit any source or other type of emissions activity in one state from contributing significantly to nonattainment of the NAAQS in another state (prong 1) and from interfering with maintenance of the NAAQS in another state (prong 2). The third and fourth prongs, which are codified in section 110(a)(2)(D)(i)(II), are provisions that prohibit emissions activity in one state from interfering with measures required to prevent significant deterioration of air quality in another state (prong 3) or from interfering with

measures to protect visibility in another state (prong 4). Section 110(a)(2)(D)(ii) requires SIPs to include provisions insuring compliance with sections 115 and 126 of the Act, relating to interstate and international pollution abatement.¹

Through this notice, EPA is proposing to approve the prong 1 and prong 2 portions of infrastructure SIP submissions transmitted under cover letter by: Alabama (dated December 9, 2015); Florida (dated December 14, 2015); Georgia (dated December 14, 2015); Kentucky (dated February 8, 2016); Mississippi (dated December 8, 2015); North Carolina (dated December 4, 2015); South Carolina (dated December 14, 2015); and Tennessee (dated December 16, 2015), as demonstrating that these states do not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.² All other applicable infrastructure SIP requirements for these SIP submissions have been or will be addressed in separate rulemakings. A brief background regarding the 2012 PM_{2.5} NAAQS is provided below. For comprehensive information on the 2012 PM_{2.5} NAAQS, please refer to the Federal Register notice cited above.

II. What Approach is EPA Using to Evaluate these SIP Submissions?

In several federal rulemakings, EPA has developed and consistently applied a framework for addressing prongs 1 and 2 of the interstate transport requirements with respect to the PM_{2.5} NAAQS. That framework has four basic steps, including: (1) identifying downwind receptors

¹ EPA highlighted the statutory requirement to submit infrastructure SIPs within three years of promulgation of a new NAAQS in an October 2, 2007, guidance document entitled “Guidance on SIP Elements Required Under Sections 110(a)(1) and (2) for the 1997 8-hour Ozone and PM_{2.5} National Ambient Air Quality Standards” (2007 guidance). EPA has issued additional guidance documents and memoranda, including a September 13, 2013, guidance document titled “Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2)” (2013 guidance).

² EPA notes that the Agency may not have received the submissions until after the date of the cover letter.

that are expected to have problems attaining or maintaining the NAAQS; (2) identifying which upwind states contribute to these identified problems in amounts sufficient to warrant further review and analysis; (3) for states identified as contributing to downwind air quality problems, identifying upwind emissions reductions necessary to prevent an upwind state from significantly contributing to nonattainment or interfering with maintenance of the NAAQS downwind; and (4) for states that are found to have emissions that significantly contribute to nonattainment or interfere with maintenance of the NAAQS downwind, reducing the identified upwind emissions through adoption of permanent and enforceable measures. This framework was most recently applied with respect to PM_{2.5} in the Cross-State Air Pollution Rule (CSAPR), designed to address the 1997 and 2006 PM_{2.5} standards as well as the 1997 ozone standards.

EPA provided additional information in a memorandum published on March 17, 2016, titled “Information on the Interstate Transport ‘Good Neighbor’ Provision of the 2012 Fine Particulate Matter National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I)” (2016 memorandum).³ The 2016 memorandum provides information relevant to EPA Regional Office review of the CAA section 110(a)(2)(D)(i)(I) “good neighbor” provision in infrastructure SIPs with respect to the 2012 PM_{2.5} NAAQS, describes EPA’s past approach to addressing interstate transport, and provides EPA’s general review of relevant modeling data and air quality projections as they relate to the 2012 PM_{2.5} NAAQS. This proposed rulemaking considers information provided in that memorandum.

³ This memorandum is available in the docket for this rulemaking and at https://www.epa.gov/sites/production/files/2016-05/documents/good-neighbor-memo_implementation.pdf.

In particular, the 2016 memorandum provides states and EPA Regional offices with information that is central to the first step in the 4-step framework for determining whether an upwind area contributes significantly to downwind air quality problems, which is the identification of the downwind receptors that may present nonattainment or maintenance problems at the appropriate time. Specifically, the 2016 memorandum provides projected future year annual PM_{2.5} design values for monitors in the United States based on quality assured and certified ambient monitoring data and air quality modeling. The memorandum further describes how these projected potential design values can be used to help determine which monitors should be further evaluated to potentially address whether emissions from other states significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS at those sites. The 2016 memorandum explains that for the purposes of addressing interstate transport for the 2012 PM_{2.5} NAAQS, it may be appropriate to evaluate projected air quality in 2021, which is the attainment deadline for 2012 PM_{2.5} NAAQS nonattainment areas classified as moderate.

In CSAPR, EPA defined nonattainment receptors as those monitoring sites that are projected to exceed the NAAQS in the appropriate future analytic year, while maintenance receptors are monitoring sites that are projected to have difficulty maintaining the relevant NAAQS in a scenario that considers historical variability in air quality at that receptor (81 FR 74504, 74531, October 26, 2016). Accordingly, EPA used the average projected design value to identify potential “nonattainment” receptors, and the maximum projected design value to identify potential “maintenance” receptors. Since modeling results are only available for 2017 and 2025, one way to assess potential receptors for 2021 is to assume that receptors projected to have average and/or maximum design values above the NAAQS in both 2017 and 2025 are also likely

to be either nonattainment or maintenance receptors in 2021. Similarly, it may be reasonable to assume that receptors that are projected to attain the NAAQS in both 2017 and 2025 are also likely to be attainment receptors in 2021. Where a potential receptor is projected to be nonattainment or maintenance in 2017, but projected to be attainment in 2025, further analysis of the emissions and modeling may be needed to make a further judgement regarding the receptor status in 2021.

Based on this approach, according to the 2016 memorandum, all the potential nonattainment receptors and most of the maintenance receptors are in California, located in the San Joaquin Valley or South Coast nonattainment areas. However, there is also one potential maintenance receptor in Shoshone County, Idaho, and one potential maintenance receptor in Allegheny County, Pennsylvania. All other monitors in the United States that had at least one complete (and valid) PM_{2.5} design value for the annual average 2012 NAAQS in the 2009-2013 period are projected to attain and maintain the 2012 PM_{2.5} NAAQS in 2017 and 2025.

The 2016 memorandum also notes that because of data quality problems, nonattainment and maintenance projections were not conducted for monitors in all or portions of Florida, Illinois, Idaho (outside of Shoshone County), Tennessee and Kentucky. EPA notes, however, that data quality problems have subsequently been resolved for all of the aforementioned areas. These areas have current design values⁴ below the 2012 PM_{2.5} NAAQS and are expected to continue to maintain the NAAQS due to downward emission trends for nitrogen oxides (NO_x) and sulfur dioxide (SO₂) and therefore are not considered potential receptors for the purpose of interstate transport for the 2012 PM_{2.5} NAAQS.

⁴ Current design values include the 2015-2017 available and certified data that states submitted to EPA on May 1, 2018, through the Air Quality System.

Therefore, from “Step 1” of this evaluation, the areas identified as “potential downwind nonattainment and maintenance receptors” are:

- Seventeen potential receptors in California, located in the San Joaquin Valley or South Coast nonattainment areas;
- Shoshone County, Idaho; and
- Allegheny County, Pennsylvania.

As stated above, “Step 2” is the identification of states contributing to downwind nonattainment and maintenance receptors, such that further analysis is required to identify necessary upwind reductions. For this step, EPA will be specifically determining if emissions from the eight southeastern states contribute to the potential downwind nonattainment and maintenance receptors identified in Step 1.

For the 1997 and 2006 PM_{2.5} NAAQS, EPA used air quality modeling and an air quality threshold of one percent of the PM_{2.5} NAAQS to identify upwind states that contribute to, and are thus “linked” to, projected nonattainment or maintenance receptors (76 FR 48237, August 8, 2011).⁵ If an upwind state impacts a downwind receptor by less than the one percent threshold, EPA determined that the state is not “linked” and therefore does not contribute to nonattainment at the receptor. Likewise, if there is no linkage to a maintenance receptor (based, again, on an

⁵ The 2012 contribution modeling is documented in EPA’s “Air Quality Modeling Final Rule Technical Support Document” (June 2011) located in the docket for this proposed rulemaking and at <https://www.epa.gov/csapr/cross-state-air-pollution-final-and-proposed-rules> [titled](#) *Contributions of 8-hour ozone, annual PM_{2.5}, and 24-hour PM_{2.5} from each state to each monitoring site (Excel)*. EPA used the CAMx version 5.3 to simulate ozone and PM_{2.5} concentrations for the 2005 base year and the 2012 and 2014 future year scenarios. CAMx was also used for the 2012 source apportionment modeling to quantify interstate transport of ozone and PM_{2.5}.

impact of less than the one percent threshold), EPA determined the upwind state does not contribute to maintenance concerns at that receptor. EPA has not set an air quality threshold for the 2012 PM_{2.5} NAAQS, and does not have air quality modeling showing impacts on projected nonattainment or maintenance receptors for this NAAQS.

In the absence of contribution modeling, EPA believes that a proper and well-supported weight of evidence approach can provide sufficient information for purposes of evaluating the impact of the southeastern states on potential downwind receptors with respect to the 2012 PM_{2.5} NAAQS. As part of this weight of evidence approach, EPA considered the CSAPR air quality modeling conducted for purposes of evaluating upwind state impacts on downwind air quality with respect to the 1997 annual PM_{2.5} NAAQS of 15.0 µg/m³ (as well as the 2006 24-hour PM_{2.5} NAAQS and 1997 Ozone NAAQS). Although not conducted for purposes of evaluating the 2012 PM_{2.5} NAAQS, as noted above, this modeling can inform EPA's analysis regarding both the general magnitude of downwind PM_{2.5} impacts and the downwind distance in which states may contribute to receptors with respect to the 2012 annual PM_{2.5} NAAQS of 12.0 µg/m³. In particular, if the same one percent contribution threshold used in CSAPR for the 1997 and 2006 PM_{2.5} NAAQS applied to the 2012 PM_{2.5} NAAQS, EPA could consider the fact that a particular state's impact was below that value (that is, 0.12 µg/m³). EPA notes the Agency has not set an air quality threshold for the 2012 PM_{2.5} NAAQS and the Agency does not have air quality modeling showing impacts on projected nonattainment or maintenance receptors for the 2012 PM_{2.5} NAAQS. In addition, EPA considers geographical information (primarily the distance between the southeastern states and the downwind receptors), including whether the receptors are upwind or downwind, and other information (e.g., emission trends, air quality data,

regulation of PM_{2.5} and precursors) provided in the states' submittals. EPA notes that no single piece of information, by itself, is fully conclusive. Instead, the total weight of all the evidence taken together is used to evaluate significant contributions to nonattainment or interference with maintenance of the 2012 PM_{2.5} NAAQS in another state.

EPA addresses Step 1 of the framework in section III, below, by discussing each of the potential downwind nonattainment and maintenance receptors. EPA mentions the California and Idaho receptors only briefly because they have little relevance for the eight southeastern states, as explained below. In section IV, below, EPA addresses Step 2 of the framework by discussing the southeastern states' impacts on the potential receptors. This proposed rulemaking considers the analyses from Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee as well as additional supplemental analysis conducted by EPA during review of these submittals.⁶

III. Potential Receptors

As noted above, in Step 1 of the framework, EPA identifies the potential downwind nonattainment and maintenance receptors.

A. California

California has seventeen potential receptors, located in the San Joaquin Valley or South Coast nonattainment areas. However, the nearest southeastern state is well over 1,000 miles – and downwind – from California. With this large distance and a general prevailing west to east wind flow, there is no evidence that any southeastern state will impact the California potential

⁶ Because EPA proposes to find that Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee, individually, does not have emissions that contribute to any nonattainment or maintenance receptor in any other state, it is not necessary to evaluate steps 3 and 4 of the analytical framework described above.

receptors, and as a result, EPA concludes that sources in Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee do not significantly contribute to nonattainment or interfere with maintenance.

B. Shoshone County, Idaho

Shoshone County, Idaho, has a potential maintenance receptor, but as with California, this receptor is well over 1,000 miles, and upwind from, the nearest southeastern state. With this distance and prevailing wind direction, there is no evidence that any southeastern state will impact this area, and as a result, EPA concludes that sources in Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee do not significantly contribute to nonattainment or interfere with maintenance.

C. Allegheny County, Pennsylvania

In the eastern United States, the modeling results provided in the 2016 memorandum show that the Liberty monitor (AQS: 42-003-0064), located in Allegheny County, Pennsylvania (hereinafter referred to as the Liberty monitor or Allegheny County monitor), was projected to be above the 2012 PM_{2.5} NAAQS in the 2017 modeling (as a maintenance receptor). This monitor is, consistent with the projection, currently violating the 2012 PM_{2.5} NAAQS based on available and certified 2015-2017 ambient data measuring 13.0 µg/m³. However, the monitor is projected to both attain and maintain the NAAQS in 2025. The 2016 memorandum indicates that under such a condition (where EPA's photochemical modeling indicates an area will attain and maintain the 2012 PM_{2.5} NAAQS in 2025 but not in 2017) further analysis of the site should be performed to determine if the site may be a nonattainment or maintenance receptor in 2021. A simple linear interpolation between the 2017 and 2025 projected design values for the Allegheny

County monitor leads to a projected 2021 design value of 11.42 $\mu\text{g}/\text{m}^3$ and a maximum design value of 11.91 $\mu\text{g}/\text{m}^3$, which are both below the 2012 PM_{2.5} NAAQS, indicating the monitor is likely to attain the standard by the attainment deadline of 2021.⁷

In addition to the modeling information, emissions and air quality data trends can help corroborate the interpolated 2021 values. Over the last decade, local and regional emissions reductions of primary PM_{2.5}, SO₂, and NO_x, have led to large reductions in annual PM_{2.5} design values in Allegheny County, Pennsylvania. The 2015–2017 annual average PM_{2.5} design value for the Liberty monitor is 13.0 $\mu\text{g}/\text{m}^3$, which is above the standard. Even so, expected emissions reductions in the next four years will lead to additional reductions in measured PM_{2.5} concentrations at the Liberty monitor.

There are both local and regional components to the measured PM_{2.5} levels in Allegheny County and the greater Pittsburgh area. Previous CSAPR modeling showed that regional precursor emissions from upwind states contribute to PM_{2.5} nonattainment at the Liberty monitor. In recent years, large SO₂ and NO_x reductions from power plants have occurred in Pennsylvania and states upwind from the greater Pittsburgh region. Projected power plant closures and additional emission controls in upwind states will help further reduce both direct PM_{2.5} and PM_{2.5} precursors. Regional emissions reductions will continue to occur from current on-the-books federal and state regulations such as the federal on-road and non-road vehicle programs and various rules for major stationary emission sources. Additionally, local reductions to both direct PM_{2.5} and SO₂ emissions are expected and should also contribute to a further

⁷ As noted in the 2016 memorandum, additional information about emissions and trends may be needed to further support this conclusion. Provided in the docket to this proposed rulemaking are the infrastructure SIP submissions which include information related to air quality data and trends in all states that are the subject of this proposed rulemaking (Docket ID: EPA-R04-OAR-2016-0334).

decline in Allegheny County's monitored PM_{2.5} concentrations. The Allegheny SO₂ SIP also projects lower SO₂ emissions resulting from vehicle fuel standards, reductions in general emissions due to declining population in the Greater Pittsburgh region, and several shutdowns of significant sources of emissions in Allegheny County.

In addition, in a supplemental analysis for this proposed rulemaking, EPA conducted a long-term trend analysis of the PM_{2.5} ambient air quality data using the Mann-Kendall trend test to detect increasing or decreasing trends at PM_{2.5} monitoring sites in Pennsylvania (Allegheny, Delaware and Lebanon counties), Ohio (Cuyahoga and Lorain Counties)⁸ and southeastern Region 4 states as an additional weight of evidence. EPA found downward trends in all of those counties during the 2008-2017 time period. This trends analysis is discussed in the Technical Support Document (TSD) entitled *Annual Fine Particulate Matter (PM_{2.5}) Trend Analysis* found in the docket for this proposed action (Docket ID: EPA-R04-OAR-2016-0334). Not only have emissions trended downward in Allegheny County because of reductions from CSAPR implementation across the CSAPR states, emissions have trended downward nearly universally among PM air quality monitors in CSAPR states.⁹ This trend is reinforced by the air quality data presented in the 2016 memorandum.

Thus, EPA's modeling projections, the recent downward trends in local and upwind states' emissions, the expected downward trend in emissions between 2017 and 2021 and the

⁸ EPA's 2016 memorandum does not identify the Cleveland, Ohio Area (Cuyahoga and Lorain counties), Lebanon and Delaware counties in Pennsylvania as a projected nonattainment or maintenance area in 2017 or 2025; therefore, these areas were not considered potential receptors for purposes of interstate transport the 2012 PM_{2.5} standard. Furthermore, monitors in the Cuyahoga (Harvard Yard monitor AQS ID: 39-035-0065) and Lorain (AQS ID: 39-093-3002) are measuring below the annual standard at 11.7 µg/m³ and 7.6 µg/m³ respectively, based on 2015-2017 data. Similarly, monitors in Delaware and Lebanon counties are also measuring below the 2012 PM_{2.5} standard based on 2015-2017 design values.

⁹ As described in the TSD, EPA found the same trend during 2008-2017 in Cuyahoga and Lancaster Counties in Ohio, which are near Allegheny County in Pennsylvania.

downward trend in upwind monitored PM_{2.5} sites all indicate that the Liberty monitor will attain and be able to maintain the 2012 PM_{2.5} NAAQS by 2021. Accordingly, EPA proposes to determine that Allegheny County is unlikely to have either nonattainment or maintenance problems in 2021 and therefore should not be considered a receptor for purposes of interstate transport for the 2012 PM_{2.5} NAAQS.

IV. EPA's Review of How the Southeast States Addressed Prongs 1 and 2

The following discussion summarizes EPA's individual analyses for the portions of submissions from Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee intended to meet the prong 1 and prong 2 requirements of 110(a)(2)(D)(i)(I) for the 2012 PM_{2.5} NAAQS. EPA's analysis is based on the supplemented CSAPR framework evaluation and information included in the states' submissions as a collective weight of evidence demonstration. The analysis focuses on evaluating whether there will be any downwind maintenance or nonattainment receptors in 2021, as discussed above, and the extent, if any, to which emissions from each of the eight states may impact any such downwind receptor. EPA evaluated the contribution modeling conducted in support of CSAPR (CSAPR contribution modeling) to determine if any of the eight southeastern states were projected to contribute greater than one percent of the annual standard (0.12 µg/m³) at certain downwind receptors with potential nonattainment/maintenance issues.¹⁰ For Alabama, Florida, Georgia, Mississippi,

¹⁰ The 2012 contribution modeling is documented in EPA's "Air Quality Modeling Final Rule Technical Support Document" (June 2011) located in the docket for this proposed rulemaking and at <https://www.epa.gov/csapr/cross-state-air-pollution-final-and-proposed-rules> [titled](#) *Contributions of 8-hour ozone, annual PM_{2.5}, and 24-hour PM_{2.5} from each state to each monitoring site (Excel)*. EPA used the CAMx version 5.3 to simulate ozone and PM_{2.5} concentrations for the 2005 base year and the 2012 and 2014 future year scenarios. CAMx was also used for the 2012 source apportionment modeling to quantify interstate transport of ozone and PM_{2.5}.

North Carolina and South Carolina, there are no impacts at any potential downwind receptor by at least that amount, which EPA considers an important indication that none of those states will contribute to such a receptor. EPA also considered information provided in the individual 2012 PM_{2.5} infrastructure SIP submissions and other information.

A. Alabama

Alabama concluded in its December 9, 2015, PM_{2.5} infrastructure SIP submission that it does not contribute significantly to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state for the following reasons: 1) there are no designated PM_{2.5} nonattainment areas in Alabama or in surrounding states; 2) available monitoring data in Alabama and the surrounding states for 2012-2014 show design values below the standard; 3) emissions of the PM precursors NO_x and SO₂ from point sources in Alabama have decreased by 10 and 46 percent, respectively, for the years 2009-2013; and 4) there are federal and SIP-approved state regulations in place to control PM_{2.5} precursors. Based on the rationale discussed below, EPA proposes to approve Alabama's SIP submission on grounds that it has adequate provisions to ensure that emissions from sources within the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

Alabama's submission examined available PM_{2.5} monitoring data from 2012-2014 in the State and surrounding states. According to this data, the highest design value during this period was 11.6 µg/m³ at the North Birmingham monitor (AQS: 01-073-0023) in Alabama. Available quality-assured, certified data for 2015-2017 in Alabama and in the neighboring states is also below the standard. The highest valid 2015-2017 design value in Alabama was 11.0 µg/m³ at the

Arkadelphia near-road site (01-073-2059) in Jefferson County. The highest valid design values in the neighboring states for 2015-2017 was 10.5 $\mu\text{g}/\text{m}^3$ at the near-road site near Georgia Institute of Technology Fulton County, Georgia (13-121-0056). EPA's 10-year trend analysis indicates Alabama monitors generally exhibited a decreasing trend in $\text{PM}_{2.5}$ concentrations from 2008 to 2017. More information on air quality trends in Alabama are provided in the TSD included in the docket for this proposed rulemaking.

The NO_x and SO_2 point source emissions data provided in Alabama's submittal show that these emissions have decreased in the State by 10 and 46 percent, respectively, for 2009-2013. Furthermore, as noted in the submittal, several coal-fired electricity generating units (EGUs) in Alabama were scheduled for retirement in 2016, further reducing NO_x and SO_2 emissions.¹¹

In its submittal, Alabama identifies SIP-approved regulations at Alabama Administrative Code Chapter 335-3-8 that require controls and emission limits for certain NO_x emitting sources in the State. These regulations include the SIP-approved portion of the NO_x SIP call that requires certain NO_x emitting sources to comply with a capped NO_x emission budget. The State also identifies SIP-approved regulations at Alabama Administrative Code Chapter 335-3-5 that require controls and emission limits for certain SO_2 emitting sources in the State. Alabama further notes that it has implemented several federal programs that, while not relied upon to

¹¹ EPA identified four EGUs in Alabama that have retired units in the state including Tennessee Valley Authority (TVA) Colbert Fossil Plant, Colbert County, AL (units 1-5 retired April 30, 2016); Alabama Power Plant Barry, Mobile County, AL (unit 3 retired on August 24, 2015), TVA Widows Creek Fossil Plant, Jackson County, AL (units 1-6 retired June 25, 2014; units 7 and 8 retired April 30, 2016) and Alabama Power Plant Gorgas, Walker County, AL (retired units 6 and 7 on August 24, 2015). *Source* <https://www.epa.gov/airmarkets/business-center>

address its “good neighbor” obligations for the 2012 PM_{2.5} NAAQS, have reduced PM_{2.5} precursor emissions within the State. Alabama also controls certain sources that contribute to PM_{2.5} concentrations in ambient air through its SIP-approved permitting regulations at Alabama Administrative Code Chapter 335-3-14. These permitting requirements help ensure that no new or modified sources in the State subject to these permitting regulations will contribute significantly to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS.

EPA evaluated whether there are maintenance or nonattainment receptors for 2021 to which Alabama’s emissions are linked. As noted in section III.C above, EPA’s 2016 memorandum identifies the Allegheny County Liberty monitor (AQS ID: 42-003-0064) as a potential maintenance receptor in 2017, but indicates that it is likely to attain and maintain the annual standard in 2021. EPA’s review of the CSAPR contribution modeling indicates that Alabama will not contribute greater than one percent of the 2012 standard (or 0.12 µg/m³) to the Liberty monitor in Allegheny County. This result is consistent with the fact that the monitor is approximately 600 miles northeast of the Alabama border.

Based on the weight of the evidence presented above, EPA proposes to approve Alabama’s SIP submission on grounds that it adequately addresses the State’s 110(a)(2)(D)(i)(I) good neighbor obligation for the 2012 PM_{2.5} standard and that the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

B. Florida

Florida concluded in its December 14, 2015, PM_{2.5} infrastructure SIP submission that emissions from sources in Florida do not significantly contribute to nonattainment or interfere

with maintenance of the 2012 PM_{2.5} NAAQS in any other state for the following reasons: 1) there are no designated PM_{2.5} nonattainment areas in Florida or in surrounding states; 2) PM_{2.5} concentrations in the Southeast are in compliance with the standard; 3) modeling conducted by EPA in support of CSAPR indicates that Florida's contribution to any designated 2012 PM_{2.5} nonattainment area is less than 0.1 percent of the standard; 4) emissions of NO_x and SO₂ in Florida have decreased over the past decade; and 5) Florida has SIP-approved permitting regulations in place addressing certain activities that contribute to PM_{2.5} concentrations in ambient air. Based on the rationale discussed below, EPA proposes to approve Florida's SIP submission on grounds that it has adequate provisions to ensure that emissions from sources within the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

Florida's submittal considered EPA's CSAPR contribution modeling and concluded that Florida's contribution to the designated nonattainment areas for the 2012 PM_{2.5} NAAQS is less than 0.013 µg/m³ (approximately 0.1 percent of the standard). The State's submittal also notes that NO_x and SO₂ emissions in Florida have decreased by 50 percent and 70 percent, respectively, over the past decade. Florida states that these reductions lower Florida's potential impact on PM_{2.5} concentrations in other states.

Florida also identified SIP-approved regulations in the Florida Administrative Code, including Chapters 62-210, 62-212, and 62-296, that provide for the implementation of a permitting program required under Title I, Parts C and D of the CAA for certain activities that contribute to ambient PM_{2.5} concentrations. These permitting requirements help ensure that no new or modified sources in the State subject to these permitting regulations will contribute

significantly to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS. Chapter 62-296 also contains additional SIP-approved regulations that control certain sources that contribute to PM_{2.5} concentrations in the ambient air.

Furthermore, as Florida notes in its submittal, the nearest designated nonattainment area is over 1,000 kilometers (or 621.371 miles) from its northern border, and most of the direct and precursor PM_{2.5} emissions in the State are located in central and south Florida. Available quality-assured, certified data for 2015-2017 in Florida and in the neighboring states is also below the standard. The highest valid 2015-2017 design value in Florida was 8.0 µg/m³ at the Sydney site (AQS ID: 12-057-3002) in Hillsborough County. The highest valid design value in the neighboring states was 11.0 µg/m³ at the Arkadelphia near-road site (AQS ID: 01-073-2059) in Jefferson County, Alabama. EPA's 10-year trend analysis indicates that Florida monitors generally exhibited a decreasing trend in PM_{2.5} concentrations from 2008 to 2017. More information on air quality trends in Florida are provided in the TSD included in the docket for this proposed rulemaking.

EPA's supplemental analysis focused on whether there are maintenance or nonattainment receptors for 2021 to which Florida's emissions are linked. As noted in section III.C above, EPA's 2016 memorandum identifies the Allegheny County Liberty monitor (AQS ID: 42-003-0064) as a potential maintenance receptor in 2017, but indicates that it is likely to attain and maintain the annual standard in 2021. EPA's review of the CSAPR contribution modeling indicates that Florida's contribution to the Liberty monitor is less than one percent of the 2012 PM_{2.5} NAAQS which is consistent with Florida's determination that sources in the State will not

contribute to greater than one percent of the standard. In addition, the Allegheny County Liberty monitoring site is approximately 700 miles from the Florida state border.

Based on weight of the evidence presented above, EPA proposes to approve Florida's SIP submission on grounds that it addresses the State's 110(a)(2)(D)(i)(I) good neighbor obligation for the 2012 PM_{2.5} standard and that the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

C. Georgia

Georgia concluded in its December 14, 2015, PM_{2.5} infrastructure SIP submission that it does not contribute significantly to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state for the following reasons: 1) modeling conducted by EPA in support of CSAPR indicates that Georgia's contribution to any designated 2012 PM_{2.5} nonattainment area is less than one percent of the standard; and 2) Georgia has SIP-approved permitting regulations that control certain sources that contribute to PM_{2.5} concentrations in ambient air. Furthermore, there are currently no designated nonattainment areas in Georgia or in the surrounding states. Based on the rationale discussed below, EPA proposes to approve Georgia's SIP submission on grounds that it has adequate provisions to ensure that emissions from sources within the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

Based on Georgia's review of the CSAPR contribution modeling, the State concluded that its maximum potential contribution to the designated nonattainment areas for the 2012 PM_{2.5}

NAAQS is less than $0.081 \mu\text{g}/\text{m}^3$ (less than 0.7 percent of the standard), and therefore, sources in the State do not contribute to downwind receptors with potential downwind nonattainment and/or maintenance issues. In addition, Georgia identifies SIP-approved permitting regulations in Georgia Rules for Air Quality 391-3-1-.02 and -.03 that implement the permitting programs required under Title I, Parts C and D of the CAA for certain activities that contribute to ambient $\text{PM}_{2.5}$ concentrations. These permitting requirements help ensure that no new or modified sources in the State subject to these permitting regulations will contribute significantly to nonattainment or interfere with maintenance of the 2012 $\text{PM}_{2.5}$ NAAQS. Georgia also identified several SIP-approved Rules that require enforceable limits and control measures for $\text{PM}_{2.5}$ and precursor emissions within the State as well as other federally-enforceable measures not part of the approved SIP that require reduction in SO_2 emission for certain sources in the State. Available quality-assured, certified data for 2015-2017 indicate that the highest design value in Georgia was $10.5 \mu\text{g}/\text{m}^3$ at the near road site by Georgia Institute of Technology in Fulton County (AQS ID: 13-121-0056). The highest design value in the surrounding states was $11.0 \mu\text{g}/\text{m}^3$ at the Arkadelphia near-road site in Jefferson County, Alabama (AQS ID: 01-073-2059). EPA's 10-year trend analysis indicated that Georgia monitors generally exhibited a decreasing trend in $\text{PM}_{2.5}$ concentrations from 2008 to 2017. More information on air quality trends in Georgia are provided in the TSD included in the docket for this proposed rulemaking.

EPA's supplemental analysis focused on whether there are maintenance or nonattainment receptors for 2021 to which Georgia's emissions are linked. As noted in section III.C above, EPA's 2016 memorandum identifies the Allegheny County Liberty monitor (AQS ID: 42-003-0064) as a potential maintenance receptor in 2017, but indicates that it is likely to attain and

maintain the annual standard in 2021. Georgia's review of the CSAPR contribution modeling, as provided in the State's 2015 SIP submittal, indicates that sources in the State will contribute less than one percent of the 2012 standard to the Liberty monitor which is consistent with EPA's review of the projected contribution modeling. In addition, the Allegheny Liberty monitor (AQS ID: 42-003-0064) is approximately 500 miles away from the Georgia state border.

Based on the weight of the evidence presented above, EPA proposes to approve Georgia's SIP submission on grounds that it adequately addresses the State's 110(a)(2)(D)(i)(I) good neighbor obligation for the 2012 PM_{2.5} standard and that the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

D. Kentucky

Kentucky concluded in its February 8, 2016, PM_{2.5} infrastructure SIP submission that the Commonwealth will not contribute significantly to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state for the following reasons: 1) available monitoring data in Kentucky and in the surrounding states for 2012-2014 (with the exception of the Cleveland, Ohio nonattainment area) have shown design values below the standard; 2) air quality monitors between Kentucky and the Cleveland Area (the only designated 2012 PM_{2.5} nonattainment area in a neighboring state) show attainment from 2012-2014; and 3) Kentucky has SIP-approved regulations to assure that the State is not interfering with attainment or maintenance of the 2012 PM_{2.5} NAAQS in any other state. Based on the rationale discussed below, EPA proposes to approve Kentucky's SIP submission on grounds that it has adequate provisions to ensure that emissions from sources within the Commonwealth will not significantly

contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

Kentucky's SIP submission indicates that the most significant sources of PM_{2.5} and its precursors are coal-fired power plants, industrial boilers, and other combustion sources. Kentucky's 2015 infrastructure SIP submission identifies several SIP-approved regulations that regulate sources of PM_{2.5} precursor emissions (as well as other federally-enforceable measures not part of the federally-approved SIP); reductions in PM_{2.5} precursor emissions in Kentucky due to permanent and enforceable emission reduction measures; and the downward trend of PM_{2.5} monitored concentrations in Kentucky and surrounding states.¹²

Kentucky identifies SIP-approved permitting regulations at 40 Kentucky Administrative Rules (KAR) 51:017 and 51:052 used to control certain sources that contribute to PM_{2.5} concentrations in ambient air. These permitting requirements help ensure that no new or modified sources in the Commonwealth subject to these permitting regulations will significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS. Kentucky also controls emissions of PM_{2.5} and PM_{2.5} precursors at certain sources through source-specific measures pursuant to other SIP-approved regulations such as 40 KAR 51:150 (NO_x requirements for stationary internal combustion engines). Kentucky also identifies CSAPR as yielding residual NO_x and SO₂ emission reductions.

¹² Kentucky also identifies the Cleveland Area (Cuyahoga and Lorain Counties) as the only PM_{2.5} nonattainment area in a neighboring state. This area is approximately 200 miles from the Kentucky border. The Cuyahoga County Harvard Yard monitor (AQS ID: 39-035-0065) and Lorain monitor (AQS ID: 39-093-3002) in the Cleveland Area are both measuring below the annual standard at 11.7 µg/m³ and 7.6 µg/m³ respectively, based on 2015-2017 air quality data. EPA's 2016 memorandum does not identify the Cleveland Area as a projected potential nonattainment or maintenance area in 2017 or 2025. Therefore, this area was not considered a downwind receptor for the 2012 PM_{2.5} standard.

Kentucky examined available PM_{2.5} monitoring data from 2012-2014 in the Commonwealth and in surrounding states. According to this data, the highest valid design values in Kentucky and surrounding states (excluding the Cleveland Area) was 11.8 µg/m³ at the W. 18th St. monitor in Marion County, Indiana. Available quality-assured, certified data for 2015-2017 in Kentucky and the surrounding states are also below the standard. The highest design value in Kentucky was 9.7 µg/m³ at the Southwick (AQS ID: 21-111-0043) site in Jefferson County. The highest valid design value in the neighboring states was 11.7 µg/m³ at the Harvard Yard monitor in Cuyahoga County, Ohio, within the Cleveland Area. Furthermore, the monitors between the Commonwealth and the Cleveland Area show attaining 2015-2017 design values. EPA's 10-year trend analysis indicates that Kentucky monitors generally exhibited a decreasing trend in PM_{2.5} concentrations from 2008 to 2017. More information on air quality trends in Kentucky are provided in the TSD included in the docket for this proposed rulemaking.

EPA's supplemental analysis focused on whether there are maintenance or nonattainment receptors for 2021 to which source emissions in Kentucky emissions are linked. As discussed in section III.C above, EPA's 2016 memorandum identifies the Allegheny County Liberty monitor (AQS ID: 42-003-0064) as a potential maintenance receptor in 2017, but indicates that the monitor is likely to attain and maintain by 2021. EPA's review of the CSAPR contribution modeling indicates that sources in the Commonwealth contribute 0.273 µg/m³ to the Liberty monitoring site which is greater than one percent of the 2012 standard. EPA notes that current SO₂ emissions in Kentucky are 204,812 tons,¹³ lower than modeled SO₂ emissions of 520,546

¹³ The 2014 NEI v2 emissions are available in the docket for this rulemaking.

tons for the CSAPR.¹⁴ Kentucky's highest contribution when considering all Allegheny monitors is at the Liberty monitor. The Allegheny County Liberty monitoring site is approximately 400 miles upwind from the Kentucky border.

As discussed in section III.C, above, local and regional emissions reductions of primary PM_{2.5}, SO₂, and NO_x, have led to large reductions in annual PM_{2.5} design values in Allegheny County, Pennsylvania. Based on EPA's modeling projections, the recent downward trend in local and regional emissions reductions, the expected continued downward trend in emissions between 2017 and 2021, and the downward trend in monitored PM_{2.5} concentrations, EPA expects that the Liberty monitor will attain and be able to maintain the 2012 PM_{2.5} NAAQS by the 2021 attainment deadline without additional PM_{2.5} precursor emission reductions from Kentucky. As mentioned above, the 2015–2017 annual average PM_{2.5} design value for the Liberty monitor is 13.0 µg/m³, which is above the 2012 PM_{2.5} standard. Even so, expected emissions reductions in the next four years will lead to additional reductions in measured PM_{2.5} concentrations at the Liberty monitor. Therefore, EPA proposes to determine that additional emission reductions from sources in the Commonwealth are not necessary to satisfy the Commonwealth's obligations under section 110(a)(2)(D)(i)(I) of the CAA. For these reasons, EPA proposes to determine that Kentucky's emissions will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS for Allegheny County, Pennsylvania.

Based on the weight of the evidence presented above, EPA proposes to approve Kentucky's SIP submission on grounds that it adequately addresses the Commonwealth's

¹⁴ The CSAPR modeled SO₂ emissions numbers, for the 2012 contribution case, can be found in this TSD in Table 7-4 at <https://www.epa.gov/sites/production/files/2017-06/documents/epa-hq-oar-2009-0491-4522.pdf>

110(a)(2)(D)(i)(I) good neighbor obligation for the 2012 PM_{2.5} standard and that the Commonwealth will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

E. Mississippi

Mississippi concluded in its December 8, 2015, PM_{2.5} infrastructure SIP submission that it does not contribute significantly to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state for the following reasons: 1) there are no designated PM_{2.5} nonattainment areas in Mississippi or in surrounding states; 2) available monitoring data in Mississippi and in the surrounding states for 2011-2014 show annual average concentrations below the standard; and 3) there are SIP-approved state regulations in place to control emissions of PM_{2.5} and PM_{2.5} precursors. Based on the rationale discussed below, EPA proposes to approve Mississippi's SIP submission on grounds that it has adequate provisions to ensure that emissions from sources within the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

Mississippi's 2015 submittal identifies SIP-approved permitting regulations at Mississippi Administrative Code APC-S-2 used to control sources of precursor emissions that contribute to PM_{2.5} concentrations in ambient air. These permitting requirements help ensure that no new or modified sources in the State subject to these permitting regulations will significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS.

Mississippi's SIP submittal also reviewed available PM_{2.5} monitoring data from 2009-2014 in the State and in surrounding states. The State concluded that design values during this

period were generally trending downward and the highest design value for 2012-2014 was 11.3 $\mu\text{g}/\text{m}^3$ at a monitor in Alabama. EPA's review of available quality-assured, certified data for 2015-2017 determined that the highest design value in Mississippi was 8.9 $\mu\text{g}/\text{m}^3$ at the Hattiesburg, Mississippi site (AQS ID: 28-035-0004). In the neighboring states, the highest valid 2015-2017 design value was 11.0 $\mu\text{g}/\text{m}^3$ at the Arkadelphia near-road site in Jefferson County, Alabama (AQS ID: 01-073-2059). EPA's 10-year trend analysis indicated that Mississippi monitors generally exhibited a decreasing trend in $\text{PM}_{2.5}$ concentrations from 2008 to 2017.¹⁵ More information on air quality trends in Mississippi are provided in the TSD included in the docket for this proposed rulemaking.

EPA's supplemental analysis focused on whether there are maintenance or nonattainment receptors for 2021 to which Mississippi's emissions are linked. As noted in section III.C above, EPA's 2016 memorandum identifies the Allegheny County Liberty monitor (AQS ID: 42-003-0064) as a potential maintenance receptor in 2017, but indicates that it is likely to attain and maintain the annual standard in 2021. EPA's review of the CSAPR contribution modeling indicates that Mississippi does not contribute greater than one percent of the 2012 standard to that site. This is consistent with the fact that the monitor is approximately 600 miles northeast of the Mississippi state border.

¹⁵ Due to incomplete data as a result of quality assurance findings in a Technical Systems Audit conducted by the EPA, none of the $\text{PM}_{2.5}$ monitoring sites in Mississippi collected enough data to produce a valid annual mean during 2012-2014. Despite this missing data, in EPA's assessment, the trends analysis still provides informative results for the Mississippi sites. Most of the sites did collect complete annual means during the most recent years, 2015, 2016, and 2017. Also, many of the sites collected five, six, or seven valid annual means during the 2008-2017 period, which met the minimum completeness criteria developed for the trends analysis.

Based on the weight of the evidence presented above, EPA proposes to approve Mississippi's SIP submission on grounds that it adequately addresses the State's 110(a)(2)(D)(i)(I) good neighbor obligation for the 2012 PM_{2.5} standard and that the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

F. North Carolina

North Carolina concluded in its December 4, 2015, PM_{2.5} infrastructure SIP submission that it does not contribute significantly to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state for the following reasons: 1) there are no designated PM_{2.5} nonattainment areas in North Carolina or in surrounding states; 2) available monitoring data in North Carolina and in the surrounding states for 2011-2014 show design values below the standard; 3) PM_{2.5}, NO_x, and SO₂ emissions in the State have declined since 1996; and 4) there are federal and SIP-approved state regulations in place to ensure that North Carolina is not interfering with attainment or maintenance of the standard in downwind states. Based on the rationale discussed below, EPA proposes to approve North Carolina's SIP submission on the grounds that it has adequate provisions to ensure that emissions from sources within the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

The State's implementation plan submittal reviewed emissions data and projections from 1996-2017 and concluded that PM_{2.5}, NO_x, and SO₂ emissions within North Carolina declined by approximately 36, 48, and 80 percent, respectively, from 1996-2011 and are projected to decrease by an additional 31, 39, and 50 percent, respectively, from 2011-2017 due to state and

federal programs.¹⁶ The State estimates that emissions of these pollutants will continue to decrease beyond 2017.

North Carolina reviewed EPA's air quality modeling analyses conducted in support of the decision to revise the annual PM_{2.5} standard to 12.0 µg/m³ where EPA concluded that all states downwind of North Carolina would attain the 2012 PM_{2.5} NAAQS by 2020; one year prior to the 2021 attainment year for the three areas in Pennsylvania designated as moderate nonattainment areas (see Table 2 in North Carolina's December 4, 2015 submittal). North Carolina does not believe that it has any significant contribution to annual PM_{2.5} concentrations in these areas in Pennsylvania because the entire state of North Carolina and the states between North Carolina and Pennsylvania (i.e., Virginia, West Virginia and Maryland) were attaining the annual standard at the time of the State's submittal in 2015.

North Carolina's SIP submission also cites to a number of State regulations that address additional control measures, means, and techniques to reduce relevant emissions in North Carolina.¹⁷ Several of these measures, means, and techniques are SIP-approved, such as 15A North Carolina Administrative Code (NCAC) 02D .1409 (addressing NO_x emissions from certain stationary internal combustion engines) and the NO_x and SO₂ emissions caps under the

¹⁶ See Table 3 - *Trends in North Carolina's Annual Statewide Emissions (Thousand Tons / Year)* in North Carolina's 2015 SIP submission. For 1990 through 2011, emissions are from the EPA's National Emissions Inventory located at

<http://www3.epa.gov/ttn/chief/eiinformation.html>. For 2013, emissions were estimated by the State.

For 2017, emissions are from the EPA's 2017 v6.2 modeling platform emissions summary, located at:

ftp://ftp.epa.gov/EmisInventory/2011v6/v2platform/reports/2017eh_cb6v2_v6_11g_state_sector_totals.xlsx.

¹⁷ North Carolina identifies a number of SIP-approved state regulations that control emissions or PM_{2.5} precursors within the State as well as some State regulations that are not part of the federally-approved SIP.

State's 2002 Clean Smokestack Act (CSA)¹⁸ that apply to certain coal-fired power plants in the State. North Carolina also identifies a number of federal programs such as CSAPR that, while not relied upon to address its "good neighbor" obligations for the 2012 PM_{2.5} NAAQS, reduce emissions of PM_{2.5} and/or PM_{2.5} precursors.¹⁹

In addition, North Carolina examined available PM_{2.5} monitoring data from 2011-2014 in the State and surrounding states. According to this data, the highest valid design value for 2012-2014 was 10.9 µg/m³ at the Macon Allied monitor in Bibb County, Georgia (AQS ID: 13-021-0007). The highest valid 2015-2017 design values in North Carolina is 8.8 µg/m³ at two sites (Durham Armory site in Durham County; AQS ID: 37-063-0015, Millbrook School site in Wake County; AQS ID: 37-183-0014). The highest valid design value in the neighboring states was 10.5 µg/m³ at the near road site by Georgia Institute of Technology in Fulton County, Georgia (AQS ID: 13-121-0056). Also, EPA's 10-year trend analysis indicates that North Carolina monitors generally exhibited a decreasing trend in PM_{2.5} concentrations from 2008 to 2017. More information on air quality trends in North Carolina are provided in the TSD included in the docket for this proposed rulemaking.

EPA's supplemental analysis focused on whether there are maintenance or nonattainment receptors for 2021 to which source emissions in North Carolina emissions are linked. As noted in section III.C above, EPA's 2016 memorandum identifies the Allegheny County Liberty monitor (AQS ID: 42-003-0064) as a potential maintenance receptor in 2017, but indicates that it is likely to attain and maintain the annual standard in 2021. EPA's review of the CSAPR

¹⁸ EPA approved the CSA emissions caps into North Carolina's SIP on September 26, 2011. *See* 76 FR 59250. The first cap was effective in 2007 and a significant step forward towards complying with 1997 PM_{2.5} and 8-hour ozone NAAQS.

¹⁹ CSAPR currently caps EGUs in the State at specific NO_x and SO₂ emission budgets.

contribution modeling indicates that North Carolina does not contribute greater than one percent of the 2012 standard.

Based on the weight of the evidence presented above, EPA proposes to approve North Carolina's SIP submission on grounds that it adequately addresses the State's 110(a)(2)(D)(i)(I) good neighbor obligation for the 2012 PM_{2.5} standard and that the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

G. South Carolina

South Carolina concluded in its December 14, 2015, PM_{2.5} infrastructure SIP submission that it does not contribute significantly to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state for the following reasons: 1) there are no designated PM_{2.5} nonattainment areas in South Carolina or in surrounding states; 2) available monitoring data in South Carolina for 2010-2014 show design values below the standard and PM_{2.5} concentrations have declined over the majority of the Southeast since 2006; 3) estimated PM_{2.5} emissions from title V sources in the State have declined overall from 2003-2014;²⁰ and 4) there are SIP-approved state regulations in place to control PM_{2.5} and PM_{2.5} precursor emissions. Based on the rationale discussed below, EPA proposes to approve South Carolina's SIP submission on grounds that it has adequate provisions to ensure that emissions from sources within the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

²⁰ Title V of the CAA requires major sources of air pollutants, and certain other sources, to obtain and operate in compliance with an operating permit.

South Carolina's SIP submission identifies SIP-approved permitting regulations at South Carolina Code of Regulations 61-62.5, Standard No. 7 and Standard No. 7.1 used to control certain sources that contribute to PM_{2.5} concentrations in ambient air. These permitting requirements help ensure that no new or modified sources in the State subject to these permitting regulations will significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS. South Carolina also controls emissions of PM_{2.5} and PM_{2.5} precursors at certain sources through source-specific measures pursuant to other SIP-approved regulations such as Regulation 61-62.2 (prohibitions on open burning), Regulation 61-62.5, Standard No. 1 (emissions from fuel burning operations), and Regulation 61-62.6 (control of fugitive particulate matter).

In addition, South Carolina provided estimated PM_{2.5} emissions data for title V sources in the State showing that these emissions have decreased by approximately 66 percent from 2003-2014, and the State reports that PM_{2.5} emissions continue to decrease in South Carolina. Furthermore, there are currently no designated nonattainment areas in South Carolina or in the surrounding states. South Carolina examined PM_{2.5} monitoring data from 2005-August 2015 in the State and determined that the design values have been below the standard since 2010. The State also determined that PM_{2.5} design values over most of the Southeast have declined since 2006. Available certified design value for 2015-2017 in South Carolina and in the surrounding states is also below the standard. The highest valid 2015-2017 design value in South Carolina was 9.1 µg/m³ at the Greenville ESC site in Greenville County (AQS ID: 45-045-0015). The highest valid design value in the neighboring states was 10.5 µg/m³ at the near road site by Georgia Institute of Technology in Fulton County, Georgia (AQS ID: 13-121-0056). EPA's 10-

year trend analysis indicates that South Carolina monitors generally exhibited a decreasing trend in PM_{2.5} concentrations from 2008 to 2017. More information on air quality trends in South Carolina are provided in the TSD included in the docket for this proposed rulemaking.

EPA's supplemental analysis focused on whether there are maintenance or nonattainment receptors for 2021 to which source emissions in South Carolina are linked. As noted in section III.C above, EPA's 2016 memorandum identifies the Allegheny County Liberty monitor (AQS ID: 42-003-0064) as a potential maintenance receptor in 2017, but indicates that it is likely to attain and maintain the annual standard in 2021. EPA's review of the CSAPR contribution modeling indicates that North Carolina will not contribute greater than one percent of the 2012 standard to the Liberty monitor. This is consistent with the fact that the monitor is approximately 365 miles northeast of the South Carolina border.

Based on the weight of the evidence presented above, EPA proposes to approve South Carolina's SIP submission on grounds that it adequately addresses the State's 110(a)(2)(D)(i)(I) good neighbor obligation for the 2012 PM_{2.5} standard and that the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

H. Tennessee

Tennessee concluded in its December 16, 2015 PM_{2.5} infrastructure SIP submission that it does not contribute significantly to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state for the following reasons: 1) there are no designated PM_{2.5} nonattainment areas in Tennessee or in surrounding states; 2) available monitoring data in Tennessee show design values below the standard and PM_{2.5} concentrations have declined over

the majority of the Southeast since 2006; 3) estimated PM_{2.5} precursor emissions from Tennessee EGUs have declined; and 4) there are SIP-approved state regulations in place to control PM_{2.5} and PM_{2.5} precursor emissions. Based on the rationale discussed below, EPA proposes to approve Tennessee's SIP submission on grounds that it has adequate provisions to ensure that emissions from sources within the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

Tennessee indicated that a number of SO₂ control measures are being implemented at many of the State's largest sources. For example, the Tennessee Valley Authority (TVA) is subject to a Federal Facilities Compliance Agreement (FFCA)²¹ and a consent decree²² that require TVA to retire several coal-fired units and to take a number of other measures to reduce SO₂ emissions. Tennessee estimated that the retirements alone will decrease emissions by roughly 27,268 tons of SO₂ from 2014 levels, a 46 percent reduction. Additionally, the FFCA and the consent decree require certain TVA coal-fired units to install selective catalytic reduction system and flue gas desulfurization system controls and require units with these controls to operate the controls continuously.

Additionally, Tennessee notes that all coal-fired EGUs in the State are subject to 40 CFR 63 Subpart UUUUU, Mercury and Air Toxics Standards, which require further unit level reductions to emissions of mercury, particulate matter, SO₂, hydrogen chloride, and several other hazardous pollutants. Tennessee estimated that PM_{2.5} emissions data for title V sources in the

²¹ Federal Facilities Compliance Agreement Between the United States Environmental Protection Agency and the Tennessee Valley Authority, In the Matter of: Tennessee Valley Authority, Docket No. CAA-04-2010-1760. The FFCA is available at <https://www.epa.gov/sites/production/files/documents/tva-ffca.pdf>.

²² *State of Alabama et. al. v. TVA*, Civil Action No. 3:11-cv-00170 (E.D. Tenn., approved June 30, 2011) imposes certain requirements on various TVA facilities that are enforceable in accordance with the terms of that agreement. The consent decree is available at <https://www.epa.gov/sites/production/files/documents/tvacoal-fired-cd.pdf>.

state have decreased by approximately 66 percent from 2003-2014, and are expected to continue to decrease. Tennessee also identified several SIP-approved Tennessee Air Pollution Control Rules that require enforceable limits and control measures for PM_{2.5} and precursor emissions²³ within the State as well as other federally-enforceable measures not part of the federal-approved SIP that require reduction in SO₂ emissions for certain sources in the State. Currently available quality-assured, certified data for 2015-2017 in Tennessee and in the surrounding states is below the annual standard. The highest valid 2015-2017 design value in Tennessee was 10.0 µg/m³ at the Air Lab site in Knox County (AQS ID: 47-093-1013). The highest valid design value in the neighboring states was 11.0 µg/m³ at the Arkadelphia near-road site in Jefferson County, Alabama (AQS ID: 01-073-2059). EPA's 10-year trend analysis indicate that Tennessee monitors generally exhibited a decreasing trend in PM_{2.5} concentrations from 2008 to 2017. More information on air quality trends in Tennessee are provided in the TSD included in the docket for this proposed rulemaking.

EPA's supplemental analysis focused on whether there are maintenance or nonattainment receptors for 2021 to which source emissions in Tennessee emissions are linked. As noted in section III.C above, EPA's 2016 memorandum identifies the Allegheny County Liberty monitor (AQS ID: 42-003-0064) as a potential maintenance receptor in 2017, but indicates that it is likely to attain and maintain the annual standard in 2021. Tennessee's review of the CSAPR contribution modeling, as provided in the State's 2015 SIP submittal, indicates that sources in the State contribute 0.133 µg/m³ to the Liberty monitoring site which is greater than one percent of

²³ See Table 1 in Tennessee's SIP submittal.

the 2012 standard and consistent with EPA's review of the CSAPR contribution modeling.²⁴

The Allegheny County monitor is approximately 300 miles upwind from the Tennessee border.

EPA notes that current precursor SO₂ emissions in Tennessee are 58,450 tons,²⁵ lower than modeled SO₂ emissions of 324,377 tons, for the CSAPR.²⁶

Tennessee's 2015 SIP submission identifies several SIP-approved regulations that regulate sources of PM_{2.5} precursor emissions (as well as other federally-enforceable measures not part of the federally-approved SIP), reductions in PM_{2.5} precursor emissions due to permanent and enforceable emission reduction measures, and the downward trend of PM_{2.5} monitored concentrations in Tennessee and surrounding states. Additionally, as discussed in section III.C above, both local and regional emissions reductions of primary PM_{2.5}, SO₂, and NO_x, have led to large reductions in annual PM_{2.5} design values in Allegheny County, Pennsylvania. The Liberty monitor is already close to attaining the NAAQS. As mentioned above, the 2015–2017 annual average PM_{2.5} design value for the Liberty monitor is 13.0 µg/m³, which is above the 2012 PM_{2.5} standard. Even so, expected emissions reductions in the next four years will lead to additional reductions in measured PM_{2.5} concentrations at the Liberty monitor. Based on EPA's modeling projections, the recent downward trend in local and regional emissions reductions, the expected continued downward trend in emissions between 2017 and 2021, and the downward trend in monitored PM_{2.5} concentrations, EPA expects that the Liberty monitor will attain and be able to maintain the 2012 PM_{2.5} NAAQS by the 2021 attainment

²⁴ See Table 4 in Tennessee's SIP submittal.

²⁵ The 2014 NEI v2 emissions are available in the docket for this rulemaking.

²⁶ The CSAPR modeled SO₂ emissions numbers, for the 2012 contribution case, can be found in this TSD in Table 7-4 at <https://www.epa.gov/sites/production/files/2017-06/documents/epa-hq-oar-2009-0491-4522.pdf>

deadline without additional PM_{2.5} precursor emission reductions from Tennessee. Therefore, EPA proposes to determine that additional emission reductions from sources in Tennessee are not necessary to satisfy the State's obligations under section 110(a)(2)(D)(i)(I) of the CAA. For these reasons, EPA proposes to determine that Tennessee's emissions will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS for Allegheny County, Pennsylvania.

Based on the weight of the evidence presented above, EPA proposes to approve Tennessee's SIP submission on grounds that it adequately addresses the State's 110(a)(2)(D)(i)(I) good neighbor obligation for the 2012 PM_{2.5} standard and that the State will not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state.

IV. Proposed Action

As described above, EPA is proposing to approve the portions of the aforementioned infrastructure submissions from Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee addressing prongs 1 and 2 of CAA section 110(a)(2)(D)(i) for the 2012 PM_{2.5} NAAQS.

V. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. *See* 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. This action merely proposes to approve state

law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, these proposed actions:

- Are not significant regulatory actions subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Are not Executive Order 13771 (82 FR 9339, February 2, 2017) regulatory actions because SIP approvals are exempted under Executive Order 12866;
- Do not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Are certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Do not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- Do not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Are not economically significant regulatory actions based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Are not significant regulatory actions subject to Executive Order 13211 (66 FR 28355, May 22, 2001);

- Are not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because this rulemaking does not involve technical standards; and
- Do not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

The SIPs subject to these proposed actions, with the exception of the South Carolina SIP, are not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), nor will it impose substantial direct costs on tribal governments or preempt tribal law. With respect to the South Carolina SIP, EPA notes that the Catawba Indian Nation Reservation is located within South Carolina, and pursuant to the Catawba Indian Claims Settlement Act, S.C. Code Ann. 27-16-120, “all state and local environmental laws and regulations apply to the Catawba Indian Nation and Reservation and are fully enforceable by all relevant state and local agencies and authorities.” Thus, the South Carolina SIP applies to the Catawba Reservation; however, because the proposed action related to South Carolina is not proposing to approve any specific rule into the South Carolina SIP, but rather proposing to find that the State’s already approved SIP meets certain CAA requirements, EPA proposes to determine that there are no substantial direct effects on the Catawba Indian Nation. EPA has also preliminarily determined that the proposed action related to South Carolina’s SIP will not impose any substantial direct costs on tribal governments or preempt tribal law.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Nitrogen dioxide, Particulate Matter, Reporting and recordkeeping requirements, Sulfur dioxide, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: July 31, 2018.

Onis “Trey” Glenn, III,

Regional Administrator,

Region 4.

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